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Review Article

## General Health Benefits of *Pranayama* W.S.R. to Effects on Respiratory System: An Ayurveda Review

Yogeshwar Ashok Tikle

M.D. (Swasthavrittha), Associate Professor, Jupiter Ayurved Medical, College, Nagpur, Maharashtra, India

### ABSTRACT

*Pranayama* is traditional techniques practicing from ancient time of Indian civilization; it establishes balances of body, mind and spiritual health. *Pranayama* used for various purposes such as; maintaining health status & beauty, delaying age and as therapeutic measure against many pathological conditions. *Pranayama* involves three stages of respiratory practice; *Puraka* (inhalation), *Kumbhaka* (retention) and *Rechaka* (exhalation). These stages when practices with respiratory control then offer several health benefits. *Pranayama* improves circulatory process of body, boost respiratory system and helps in pathological conditions like; asthma and rhinitis. Present article summarizes role of *Pranayama* on respiratory system and related diseases.

**Keywords:** *Pranayama*, Respiratory System, *Puraka*, *Kumbhaka* and *Rechaka*.

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### \*Address for Correspondence:

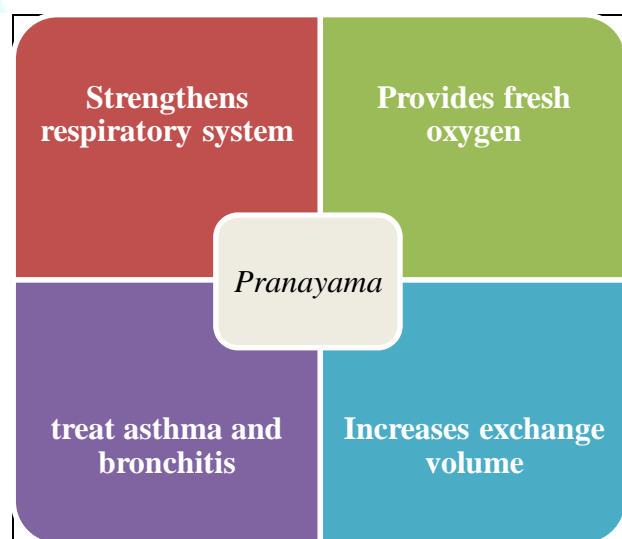
Dr Yogeshwar Ashok Tikle, M.D. (Swasthavrittha), Associate Professor, Jupiter Ayurved Medical, College, Nagpur, Maharashtra, India

### Introduction

The word *Pranayama* can be elaborated as *Prana* (energy of life), *Yama* (control) and *Ayama* (extension) means control of “energy of life” or extension of *Prana*. *Pranayama* is a breathing practice that empowers lungs capacity and maintains rhythm of respiration. *Pranayama* helps to control inspiration and expiration. *Pranayama* can be considered as technique that control mind through the control of *Vayu*/air. *Pranayama* can be sub-divided into various types; *Suryabhedana*, *Sheetalee*, *Ujjayee*, *Bhramaree*, *Bhastrika*, *Moorchaa*, *Sheetkaaree* and *Plaavinee*<sup>1-5</sup>.

The practice of *Pranayama* involves deep inspiration, holding of air followed by deep expiration and relaxation. *Pranayama* is science of breath that control energy of life, controls emotions and mind. *Pranayama* not only pacify biological energy but it also imparts spiritual energy and establishes harmony between body and nature.

Breathing forcefully and rapidly comes under *Bhastrika* *Pranayama* thus expands capacity of muscles and improves process of respiration; **Figure 1** depicted major benefits of *Pranayama* on respiratory system



**Figure 1: Major benefits of *Pranayama* on respiratory system**

*Kapalabhati Pranayama* can be considered as technique of skull shining breath, clear congestion and improve capacity of lungs. Suppress bloating and provide symptomatic relief in the condition of allergy and bronchitis.

*Ujjayi Pranayama* (victorious breath) expands lungs, improves focusing on breath, calm down mind and imparts good effects on respiratory system.

*Sitali Pranayama* means cooling exercise that imparts cooling effect on mind thus helps to regulate normal breathing and heart rate. The practice provides good health effects during summer and hot climatic conditions<sup>3-8</sup>.

*Pranayama* involves four major stages as follows:

- ✓ Inhalation (*Pooraka*)
- ✓ Exhalation (*Rechaka*)
- ✓ Retention of internal breathe (*Antarkunbhaka*)
- ✓ Retention of external breath (*Bahir kumbhaka*).

These techniques regulate flow of *Prana* in *Nadis*, provide flow of fresh air, stimulate functions of vital organs, maintain normal circulatory process and provide energy to perform various physiological activities.

### The general health benefits of *Pranayama* on Respiratory system:

*Pranayama* control force of life that is *Prana/Vayu*/air therefore restores vital energy of body and mind. *Pranayama* provide calmness and relaxation, control intense emotional feelings and induces natural sleep and clear air pathways. *Pranayama* significantly helps in respiratory problems since it regulates breathing; detoxify body, improves respiration capacity; maintain rhythm of respiration and purifies air passages. *Pranayama* maintain harmony of sympathetic and parasympathetic system, causes bronchio-dilatation, reduces respiratory muscles tone and maintain supply of energy thus provide relief in problems related to respiratory system<sup>6-10</sup>.

- ✚ *Pranayama* optimizes uses of abdominal and diaphragmatic muscles to improve respiration.
- ✚ Strengthens respiratory system and facilitate extensions of muscle.
- ✚ *Pranayama* calm anxiety by controlling breath and heart rate.
- ✚ *Pranayama* provides fresh oxygenated blood to cell.
- ✚ Exhalation forces facilitate detoxification of organs.
- ✚ *Pranayama* helps to breath when person having breathing difficulties due to the lack of lung capacity/minor surgical intervention.
- ✚ *Pranayama* helps to treat respiratory problems like; asthma and bronchitis.
- ✚ *Pranayama* relaxes whole body thus imparts calming effect that regulates normal breathing and heart functioning.
- ✚ *Pranayama* increases exchange volume of lungs thus maintains inflow of fresh air and outflow of carbon-dioxide.
- ✚ Enhanced flow of air into lungs helps to improves overall pulmonary functions.

### *Pranayama* mode of action towards the improvement of respiratory system:

*Pranayama* boosts elasticity and strength of collagen fibres thereby facilitates contraction and power of respiration.

*Pranayama* stimulates secretion of pulmonary surfactant which increases exchange volume of lungs.

*Pranayama* maintain level of prostaglandins which decreases bronchiolar smooth muscle tonicity leading to the enhanced flow of air into lungs.

It is stated that *Pranayama* stimulates stretch receptors which affects smooth muscles and improves lung capacities.

*Pranayama* relaxes skeletal muscles and thoracic cage, it also relaxes smooth muscles of bronchi thus boost pulmonary functions.

Extended expiratory period and voluntary breath holding period improves lungs capacity when these techniques of *Pranayama* performed regularly.

### Guidelines to perform *Pranayama*:

Key features of *Pranayama*:

- Inhalation, Retention & Exhalation
- Modulation in breathing speeds
- Holding of breath
- Shortening and elongation of breathing

As mentioned above one should maintain rhythm of inhalation, retention & exhalation while performing *Pranayama*. The modulation of breathing is very important to maintain breath rate. Shortening, elongation and holding of breath depends upon regular practice which should be uniform throughout the period. The other major considerations related to *Pranayama* are as follows:

- At initial stage it should be performed under guidance or after having proper training.
- The nostrils should be dilated during inhaling and should be relax in normal position while exhaling.
- *Pranayama* should be performed in morning time with empty stomach.
- It should be performed at silent or peaceful place with focus attention.
- Comfortable posture (*Siddha yoni asana*) is required for *Pranayama* since body should remain in relaxing condition.
- Spine, neck and head should remain in erect position.
- One should use carpet/mat/cloth during practice to maximize energy conduction.
- *Pranayama* should be performed before meditation.
- Never restrict breath.

### Precautions

Pregnant women, diabetic patient, patient of high blood pressure and epileptic patient should take expert advice before performing *Pranayama*. *Pranayama* should not be performed during chronic illness.

### Side effects

Itching, tingling and modulation in body thermostat may occur at initial stage.

### Conclusion

*Pranayama* strengthen respiratory muscles, enhance level of surfactant, stimulate stretch receptors, and relieve tension thus enhance lung volumes and capacities. It helps to cure obstructive respiratory diseases and bronchitis. *Pranayama* helps to maintain vital energy of body, maintain rhythms of body and detoxifies internal organs. *Pranayama* improves efficiency of respiratory system and control overall circulatory process of body.

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